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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/691,975 | 10/24/2003 | Peter J. Ianniello | 29641-836569 | 6976 |

32790 7590 09/29/2004

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EXAMINER

PECHHOLD, ALEXANDRA K

ART UNIT PAPER NUMBER

3671

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,975

Applicant(s)

IANNIELLO ET AL.

Examiner

Alexandra K Pechhold

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-80 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 49 is objected to because of the following informalities: the claim recites "CE" which should be spelled out in the claim as to what that stands for instead of using an abbreviation. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. **Claims 1-13, 25, 37, 40-43, 49, 50-57, 67, 74, and 75 are rejected under 35 U.S.C. 102(a) as being anticipated by Freese (US 4,840,515).**

Regarding claim 1, Freese discloses a laminate comprising:

- a) a sheet-like base layer, seen as base member (22), having an upper and lower surface,
- b) compression elements seen as projecting members (30), each having a base, a tip, a shaft, a shaft axis, and a neck, and
- c) a top layer, seen as filter fabric (24), having a permittivity to fluids (see Col 2, line 55), wherein the top layer is attached to a plurality of the compression elements at their tips.

Regarding claim 2, the compression elements are contiguous with the top surface of the base layer as shown in Fig. 7 and disclosed in column 2, lines 41-43.

Regarding claim 49, the method is inherent in the rejection of claims 1 and 2 above.

Regarding claims 3 and 50, the figures show frustoconical projection members (30) shows the compression elements as one of the recited shapes.

Regarding claims 4 and 51, Figs. 6 and 7 illustrate the flattened facets.

Regarding claims 5 and 52, Figs. 6-8 illustrate the claimed recitation.

Regarding claims 6 and 53, Freese disclose suitable material in column 2, lines 27-40 such as polystyrene which is fluid impermeable.

Regarding claims 7 and 54, Freese discloses this limitation in column 2, lines 41-43 and the figures.

Regarding claims 8 and 55, the layer of filter fabric (24) of Freese is described as a non-woven, needle-punched polypropylene, which can be viewed as one membrane.

Regarding claims 9-13, 56 and 57, Freese discloses in column 2, lines 43-45 that the top flat surface (34) of each projection allows for bonding of the filter media (24) thereto, and along with the illustration in Figs. 7 and 8, it appears that the top layer is attached to 100% of the tips of the members (30).

Regarding claims 25 and 67, it appears from the disclosure of Freese that the members (30) are provided on the base layer in a density sufficient to meet desired performance specifications for an intended installation, since Freese states that the dimensions of the projections are selected to provide the best combination of strength

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and height to provide good flow while having sufficient crush resistance for the applications for which it is designed (Col 2, lines 45-48).

Regarding claim 37, Fig. 8 of Freese discloses this limitation.

Regarding claim 40, Fig. 8 of Freese illustrates the average height of the elements more than the average width of their base.

Regarding claims 41 and 74, Figs. 3 and 5 of Freese illustrate such a grid like pattern.

Regarding claim 42, Freese discloses thermoplastics in column 2, lines 29-40.

Regarding claims 43 and 75, Freese discloses such material in column 2, lines 29-40.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 14-36, 38, 39, 44-48, 58-66, 68-73, and 76-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freese (US 4,840,515).**

Regarding claims 14 and 58, Freese fails to disclose the specific bond strength.

But Freese does note that column 2, lines 55-61 that the fabric (24) is bonded to the surfaces (34) of the base by a melt glue to maintain a substantially rigid surface, and that other methods of attaching may be utilized. It would have been obvious to one

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having ordinary skill in the art at the time the invention was made to modify the bond strength in Freese to be 0.1 lbs/sq.in. of attachment surface, since Freese recognizes the need to maintain a substantially rigid surfaces with a proper adhesion means.

Regarding claims 15-18 and 59-61, Freese fails to specifically disclose a ratio of shaft length to neck diameter of the compression elements. But Freese does note that the dimensions of the projections are selected to provide the best combination of strength and height to provide good flow while having sufficient crush resistance for the applications for which it is designed (Col 2, lines 45-48). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the ratio of shaft length to neck diameter of the compression elements in Freese to be at least 2-1, or 3-1, or 4-1, or 5-1, since Freese does note that the dimensions of the projections are selected to provide the best combination of strength and height to provide good flow while having sufficient crush resistance for the applications for which it is designed (Col 2, lines 45-48), and furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claims 19-24 and 62-66, Freese fails to specifically disclose a neck diameter. But Freese does note that the dimensions of the projections are selected to provide the best combination of strength and height to provide good flow while having sufficient crush resistance for the applications for which it is designed (Col 2, lines 45-48). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the neck diameter of the compression elements in Freese

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to be at least 0.5mm, or 2mm, or 6mm, or 15mm, or 20mm, or 25mm, since Freese does note that the dimensions of the projections are selected to provide the best combination of strength and height to provide good flow while having sufficient crush resistance for the applications for which it is designed (Col 2, lines 45-48), and furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claims 26-30 and 68-70, Freese fails to specifically disclose a plurality of compression elements on the base layer in a specific density. But Freese does note that the dimensions of the projections are selected to provide the best combination of strength and height to provide good flow while having sufficient crush resistance for the applications for which it is designed (Col 2, lines 45-48). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the density of the compression elements on the base layer in Freese to be at least 1 or 2 or 3 or 4 or 10 per sq. inch, since Freese does note that the dimensions of the projections are selected to provide the best combination of strength and height to provide good flow while having sufficient crush resistance for the applications for which it is designed (Col 2, lines 45-48), and furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claims 31-36 and 71-73, Freese fails to specifically disclose the percent ratio of the total cross-sectional area of the neck diameters in relation to the

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area of the bottom layer to which they are attached. But Freese does note that the dimensions of the projections are selected to provide the best combination of strength and height to provide good flow while having sufficient crush resistance for the applications for which it is designed (Col 2, lines 45-48). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify percent ratio of the total cross-sectional area of the neck diameters in Freese to be at least 5%, or 10%, or 20%, or 25%, or 50% of the area of the bottom layer to which they are attached, since Freese does note that the dimensions of the projections are selected to provide the best combination of strength and height to provide good flow while having sufficient crush resistance for the applications for which it is designed (Col 2, lines 45-48), and furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claims 38 and 39, Freese fails to disclose that the average width of the voids defined between the elements, base layer and top layer being more than the width of the base of the elements, or the average height of the elements being less than the average width of the base of the elements. But Freese notes that the dimensions of the projections are selected to provide the best combination of strength and height to provide good flow while having sufficient crush resistance for the applications for which it is designed (Col 2, lines 45-48). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the average width of the voids defined between the elements, base layer and top layer to be more than the width

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of the base of the elements, or the average height of the elements to be less than the average width of the base of the elements, since Freese does note that the dimensions of the projections are selected to provide the best combination of strength and height to provide good flow while having sufficient crush resistance for the applications for which it is designed (Col 2, lines 45-48), and furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claims 44-48 and 76-69, Freese fails to disclose the desired transmissivity of the base, top layer, and compression elements. But Freese notes that the frusto-conical configuration provides clean uninterrupted flow paths (Col 2, lines 52-53). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the transmissivity values of the base, top layer, and compression elements of Freese to comply with the values and loads recited, since Freese does note that the dimensions of the projections are selected to provide the best combination of strength and height to provide good flow while having sufficient crush resistance for the applications for which it is designed (Col 2, lines 45-48) and notes that the frusto-conical configuration provides clean uninterrupted flow paths (Col 2, lines 52-53).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexandra Pechhold whose telephone number is (703) 305-0870. The examiner can normally be reached on Mon-Thurs. from 8:00am to 5:30pm and alternating Fridays from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will, can be reached on (703)308-3870. The fax phone number for this Group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1113.


Thomas B. Will
Supervisory Patent Examiner
Group 3600

AKP
9/18/04